

IN THE CLAIMS:

Please cancel claims 9 and 20 without prejudice to or disclaimer of the subject matter contained therein.

Please amend the claims as follows:

1) **Claim 1.** (Twice Amended) An isolated polynucleotide having a nucleic acid sequence which is capable of hybridizing under high stringency conditions with the polynucleotide sequence of SEQ ID No: 1, or its complementary strand, wherein said hybridizing occurs in a solution of 5 x SSC, 5 x Denhardt's solution, 0.5% SDS and 100 µg/ml of denatured sonicated salmon sperm DNA for 12 hours at approximately 45°C followed by washing twice for 30 minutes in 2 x SSC, 0.5% SDS at a temperature of at least 65°C.

2) **Claim 2.** (Twice Amended) The isolated polynucleotide according to claim 1, wherein said isolated polynucleotide is at least 90% homologous to the polynucleotide sequence of SEQ ID NO:1.

3) **Claim 5.** (Twice Amended) The isolated polynucleotide according to claim 1, comprising the polynucleotide sequence of SEQ ID NO:1.

4) **Claim 6.** (Twice Amended) The isolated polynucleotide according to claim 1, comprising the polynucleotide sequence of SEQ ID NO:1, wherein said sequence includes a mutation G935A.

Claim 8. (Twice Amended) The isolated polynucleotide according to claim 7, encoding a KCNQ4 potassium channel subunit comprising the amino acid sequence of SEQ ID NO:2.

Claim 10. (Twice Amended) The isolated polynucleotide according to claim 7, wherein said variant has an amino acid sequence that has been changed at one or more positions located in a conserved region, wherein said region is defined by Table 1.

Claim 11. (Twice Amended) The isolated polynucleotide according to claim 7, encoding a variant KCNQ4/G285S or KCNQ4/G333S when said polynucleotide is numbered according to KCNQ1.

Claim 18. (Twice Amended) An isolated cell genetically manipulated by the incorporation of a heterologous polynucleotide according to claim 1.

Claim 19. (Twice Amended) The cell according to claim 18, genetically manipulated by the incorporation of a KCNQ4 channel subunit comprising the amino acid sequence of SEQ ID NO: 2.

Claim 21. (Twice Amended) The cell according to claim 18, wherein said variant has an amino acid sequence that has been

changed at one or more positions located in a conserved region, wherein said region is defined by Table 1.

Claim 22. (Twice Amended) The cell according to claim 18, genetically manipulated by the incorporation of the variant KCNQ4/G285S or KCNQ4/G333S when numbered according to KCNQ1.

Please add the following claims:

--Claim 59. A cell line genetically manipulated by the incorporation of a heterologous polynucleotide according to claim 1.--

--Claim 60. The isolated polynucleotide according to claim 2, wherein said isolated polynucleotide is at least 95% homologous to the polynucleotide sequence of SEQ ID NO:1.--

--Claim 61. The isolated polynucleotide according to claim 1, wherein said nucleic acid sequences capable of hybridizing under high stringency conditions with the polynucleotide sequence of SEQ ID NO:1 or its complimentary strand, wherein said hybridizing occurs in a solution of 5 x SSC, 5 x Denhardt's solution, 0.5% SDS and 100 ug/ml of denatured sonicated salmon sperm DNA for 12 hours at

approximately 45°C followed by washing twice for 30 minutes in 2 x
SSC, 0.5% SDS at a temperature of at least 70°C.--